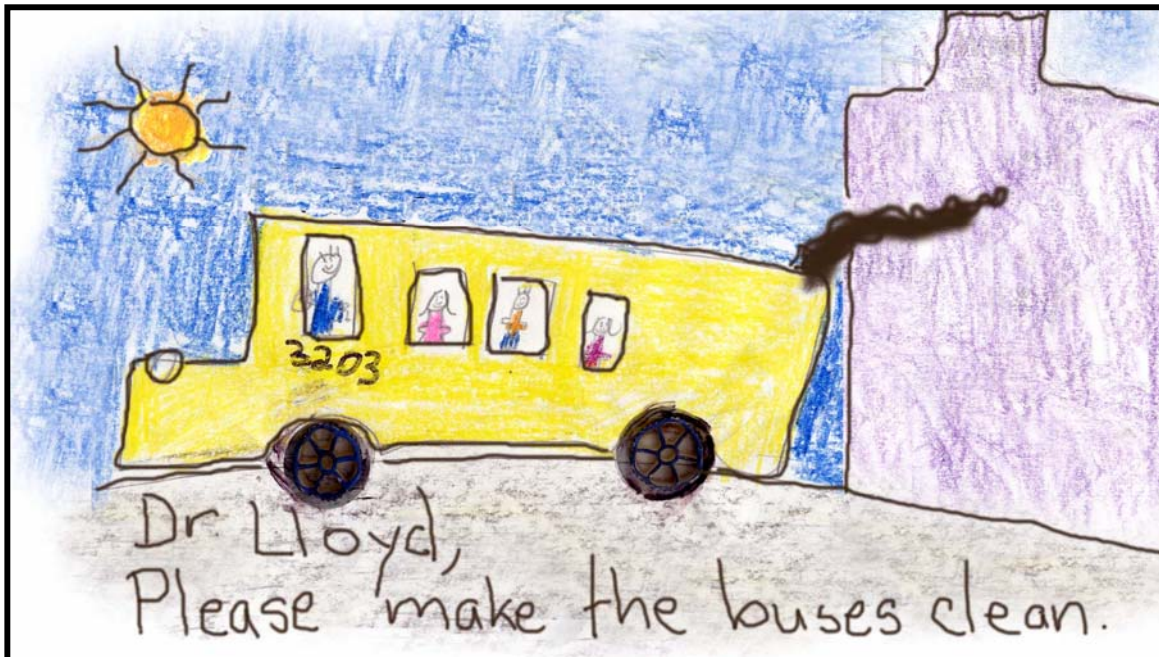


State of California  
California Environmental Protection Agency  
AIR RESOURCES BOARD

## LOWER-EMISSION SCHOOL BUS PROGRAM



Date of Board Approval: March 27, 2003  
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## PROGRAM CONTACTS

The Air Resources Board (ARB) contact for general program issues regarding the Lower-Emission School Bus Program is Krista Fregoso. General program inquiries should be directed to:

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The California Energy Commission (CEC) contacts for the Lower-Emission School Bus Program are Sandra Fromm and Mike Trujillo. School districts in all areas of the state, except those located in the Bay Area Air Quality Management District, the South Coast Air Quality Management District, and the Sacramento Metropolitan Air Quality Management District, should direct program inquiries to the CEC at:

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Sacramento, California 95814  
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## **SUMMARY OF PROGRAM CHANGES FOR THE 2002 – 2003 FISCAL YEAR**

This document serves as an addendum to the existing Lower-Emission School Bus Program Guidelines, which were approved by the Board on December 7, 2000, and issued in April 2001. Summarized below are the approved changes, contained in this addendum, for the continuation of the program with 2002 – 2003 fiscal year funds provided through Proposition 40.

- ◆ Updated regional funding allocations based on \$4,290,000 available statewide in the 2002 – 2003 fiscal year for the purchase of “clean, safe, school buses.” No new funding is available for continuation of the retrofit program component applicable to in-use diesel school buses.
- ◆ The California Energy Commission (CEC) is to administer the program for school districts in more regions throughout California than in the two previous years of the program. Fewer regions will self-administer the program.
- ◆ Board-designated funding split for alternative-fuel school bus purchases and intermediate level diesel school bus purchases (i.e., two-thirds of funding for alternative-fuel school buses; one-third of funding for diesel school buses) to be maintained as statewide goal, with less emphasis on region-specific implementation.
- ◆ Minor changes to requirements for school districts to contribute funds toward the purchase of new school buses. These changes include a reduced school district funding contribution for the purchase of a new school bus that replaces an in-use pre-1977 model year school bus.
- ◆ Elimination of the requirement for air districts that self-administer the program to contribute match funding in the amount of ten percent of their respective state funding allocations.
- ◆ Clarification that air district funding for school bus particulate matter (PM) retrofits qualifies as match funding for Proposition 40 projects implemented through the Carl Moyer Program. This provision will be implemented through the Carl Moyer Program since there is no longer an air district match funding requirement in the Lower-Emission School Bus Program.
- ◆ Updated eligibility criteria for funding new alternative-fuel and intermediate level diesel school buses with 2003 model-year engines, which include the requirement for engines in alternative-fuel school buses to be equipped with oxidation catalysts.
- ◆ Updated program timetable with enforceable delivery deadline for program-funded school buses.

- ◆ Monetary performance penalty assessed on the business entity or entities responsible for a delay that results in the failure to deliver program-funded school buses to school districts by the program delivery deadline.
- ◆ Program expenditures, at both the local and state level, subject to audit by Office of State Audits and Evaluations, Department of Finance.

## **THE LOWER-EMISSION SCHOOL BUS PROGRAM GUIDELINE REVISIONS**

This document serves as an addendum to the existing Lower-Emission School Bus Program Guidelines (Guidelines), which were approved by the Air Resources Board (ARB or Board) on December 7, 2000, and issued in April 2001. The existing Guidelines are available from our web site at: <http://www.arb.ca.gov/msprog/schoolbus/schoolbus.htm>. The Board approved the revisions contained in this addendum at a public meeting on March 27, 2003.

The purpose of this addendum is to update eligibility criteria for the purchase of new, lower-emitting school buses throughout California, to update funding allocations for participating regions, to incorporate provisions required by Proposition 40, and to incorporate other, minor administrative changes. The changes in this document are only applicable to the new school bus purchase component of the existing Lower-Emission School Bus Program. Proposition 40 and subsequent legislation (Assembly Bill 425; Statutes of 2002, Chapter 379) did not provide additional funds for the continuation of the particulate matter (PM) retrofit program component applicable to in-use diesel school buses.

### **I. BACKGROUND**

#### **A. Purpose of the Program**

The ARB's mission is to provide clean, healthful air to all residents of California, and to protect those most vulnerable to the harmful effects of air pollution. The ARB advanced this mission through the adoption of the Lower-Emission School Bus Program in December 2000. As approved by the Board, this incentive program was designed to reduce school children's exposure to both toxic PM emissions and smog-forming oxides of nitrogen (NOx) emissions through two program components: 1) a school bus purchase and infrastructure component to replace the oldest, highest-polluting buses with new, lower-emitting buses meeting the latest federal motor vehicle safety standards; and 2) a retrofit component to significantly reduce PM emissions from the in-use diesel school bus fleet.

With a funding allocation from Proposition 40 funds, the Lower-Emission School Bus Program will continue to benefit school children's health through the purchase of safe, new lower-emitting school buses.

## **B. Existing Funding for the Lower-Emission School Bus Program (2000-2001 and 2001-2002 Fiscal Years)**

For the past two years, the ARB, in conjunction with the California Energy Commission (CEC), has administered the Lower-Emission School Bus Program. Through the state budget process, Governor Gray Davis allocated a total of \$66 million for the implementation of this program. Of this total funding amount, \$49.5 million has been dedicated to the purchase of safe, lower-emitting new school buses throughout the 2000-2001 and 2001-2002 fiscal years. The remaining \$16.5 million has been dedicated to the purchase and installation of exhaust aftertreatment devices to reduce PM emissions from in-use diesel school buses.

The ARB, the CEC, and the local air quality management and air pollution control districts have administered and implemented the program using the Lower-Emission School Bus Program Guidelines approved by our Board on December 7, 2000. The CEC has been responsible for direct implementation of the program component to replace old school buses with new, low-emitting models in many areas of the state; six air districts sought and received authorization to directly implement the program in their respective regions. For the in-use diesel bus retrofit component of the program, participating air districts are responsible for its direct implementation. This program component is ongoing and is not scheduled for completion until the fall of 2003. The ARB is responsible for general program oversight and administration for both components of the Lower-Emission School Bus Program, and will continue in this role for the expenditure of the funding provided through Proposition 40.

### **Status of New Bus Purchases**

The Board's approval of the Guidelines in December 2000 included designated funding levels for the purchase of both new alternative-fuel school buses and new diesel school buses with exhaust aftertreatment requiring the use of low-sulfur diesel fuel (referred to as intermediate level diesel technology). The Board directed that two-thirds of the new bus purchase funds be used for new alternative-fuel school bus and infrastructure purchases, and that one-third of the new bus purchase funds be used for new intermediate level diesel school bus purchases.

Tables 1 and 2 below show, by region, the state funds allocated for new bus purchases to replace older, higher-emitting models and the number of new school buses purchased with those funds. The Guidelines required that air districts administering the program in their respective regions provide match funding in the amount of at least ten percent of their state funding allocations. Where applicable, Tables 1 and 2 include air districts' match funding amounts.

The information provided in these tables is based on preliminary reports by participating air districts and the CEC.

**TABLE 1**

1 <sup>st</sup> Year of Lower-Emission School Bus Program: New Bus Purchases (2000 – 2001 Fiscal Year)				
Region	State Funds	Air District Match Funds	# of New Bus Purchases	
			Alternative Fuel	Low-Sulfur Diesel
Self-Administered Program				
Bay Area AQMD	\$7,180,000	\$2,000,000	59	26
Monterey Bay Unified APCD	\$750,000	\$155,000	4	4
Sacramento Metropolitan AQMD	\$1,290,000	\$129,000	8	6
San Diego County APCD	\$3,110,000	\$311,000	19	13
South Coast AQMD	\$16,250,000	\$1,660,000	102	67
Ventura County APCD	\$810,000	\$108,825	6	3
CEC-Administered Program				
Antelope Valley APCD	\$360,000	N/A	3	1
Mojave Desert AQMD	\$430,000	N/A	2	0
San Joaquin Valley APCD	\$3,400,000	N/A	21	12
Santa Barbara County APCD	\$440,000	N/A	2	1
CEC Pool – all other air districts	\$2,730,000	N/A	12	12
ARB & CEC Administration	\$750,000			
TOTAL	\$37,500,000	\$4,363,825	238	145

Note: N/A = not applicable; these air districts were not required to provide match funding



**TABLE 2**

2 <sup>nd</sup> Year of Lower-Emission School Bus Program: New Bus Purchases (2001 – 2002 Fiscal Year)				
Region	State Funds	Air District Match Funds	# of New Bus Purchases	
			Alternative Fuel	Low-Sulfur Diesel
Self-Administered Program				
Bay Area AQMD	\$2,340,000	\$1,920,000	29	11
Monterey Bay Unified APCD	\$250,000	\$76,964	2	1
Sacramento Metropolitan AQMD	\$410,000	\$58,675	4	2
San Diego County APCD <sup>1</sup>	\$1,020,000	\$102,000	6	8
South Coast AQMD	\$5,310,000	\$1,531,000	39	20
Ventura County APCD	\$260,000	\$37,615	2	1
CEC-Administered Program				
Antelope Valley APCD	\$120,000	N/A	1	0
Mojave Desert AQMD	\$140,000	N/A	2	0
San Joaquin Valley APCD	\$1,110,000	N/A	7	5
Santa Barbara County APCD	\$150,000	N/A	2	0
CEC Pool – all other air districts	\$890,000	N/A	5	3
ARB & CEC Administration <sup>2</sup>	\$0			
<b>TOTAL</b>	<b>\$12,000,000</b>	<b>\$3,726,254</b>	<b>99</b>	<b>51</b>

Notes: N/A = not applicable; these air districts were not required to provide local match funding.

<sup>1</sup>San Diego County APCD augmented the program with \$5,172,674 from mitigation fees and funded an additional 21 alternative-fuel buses and an additional 28 intermediate level diesel buses.

<sup>2</sup>ARB and CEC did not receive administration money for the 2001 – 2002 fiscal year.

#### Status of In-Use Diesel School Bus Retrofits

The in-use diesel school bus retrofit component of the program is on-going and is scheduled for completion in the fall of 2003. The retrofit component was allocated a total of \$16.5 million during the 2000 – 2001 and 2001 – 2002 fiscal years to equip in-use diesel school buses with ARB-verified retrofit devices that reduce toxic PM emissions. Thirteen air districts throughout California are

participating in this program component. By late 2003, the ARB staff expects that about 1,500 in-use diesel school buses will have been retrofitted with catalyzed diesel particulate filters requiring the use of low-sulfur diesel fuel that reduce PM emissions by 85 percent, and about another 1,500 will have been retrofitted with diesel oxidation catalysts that reduce PM emissions by 25 percent.

**C. New Funding for the Lower-Emission School Bus Program  
(2002-2003 and 2003-2004 Fiscal Years)**

Proposition 40, the voter-approved initiative to conserve natural resources and improve state and local parks, provides funding for new school bus purchases through Assembly Bill 425 (Statutes of 2002, Chapter 379). Assembly Bill 425 directs that 20 percent of the Proposition 40 funds made available to the ARB shall be allocated for the acquisition of “clean, safe, school buses for use in California’s public schools that serve pupils in kindergarten and grades 1 to 12, inclusive.” For the 2002 – 2003 fiscal year, this means that \$4,920,000 is available for the purchase of new safe, lower-emitting school buses -- about 45 buses statewide. In the 2003 – 2004 fiscal year, the Lower-Emission School Bus Program is expected to receive an additional 20 percent of the \$23 million in Proposition 40 funds earmarked for the ARB.

**II. FUNDING ISSUES**

**A. Funding Allocations**

The funding allocation methodology used for the Lower-Emission School Bus Program during the 2000 - 2001 and 2001 - 2002 fiscal years was based on population. This methodology will continue to be used for the distribution of this year’s funds. Allocating the funds in this manner provides for the placement of new, low-emitting buses in more densely populated urban areas and will thus reduce exposure to toxic diesel particulates for the greatest number of people.

Table 3 below shows the estimated distinct air district funding allocations for school districts in seven regions throughout California. Air districts receiving funding allocations for the purchase of more than one new school bus may be permitted to administer the program for school districts in their respective regions; the CEC will administer the program for school districts in all other regions. Under this policy, the following five air districts could administer their own programs: the Bay Area Air Quality Management District (BAAQMD), the Sacramento Metropolitan Air Quality Management District (SMAQMD), the San Diego County Air Pollution Control District (SDAPCD), the San Joaquin Valley Air Pollution Control District (SJVAPCD), and the South Coast Air Quality Management District (SCAQMD). It is the ARB’s understanding, however, that only the BAAQMD, the SCAQMD, and the SMAQMD are interested in continuing

with direct program administration, therefore, Table 3 reflects that only these three air districts will continue to self-administer the program.

Compared with the previous two years of the program, air districts will be receiving significantly less grant funds for the purchase of new school buses. Although the funding allocations have decreased, the administrative and auditing requirements as a result of Proposition 40 may increase for those air districts that self-administer the program. Therefore, the ARB believes it is appropriate to focus program administration at the CEC and the larger air districts.

**TABLE 3**

<b>Estimated Funding Allocations (2002 – 2003 FY)</b>		
<b>Region</b>	<b>Funds</b>	<b>Approximate # of Buses</b>
<b>Self-Administered Program</b>		
Bay Area AQMD	\$960,000	9
Sacramento Metropolitan AQMD	\$170,000	1-2
South Coast AQMD	\$2,175,000	20
<b>CEC-Administered Program</b>		
Monterey Bay APCD	\$106,000	1
San Diego County APCD	\$415,000	4
San Joaquin APCD	\$455,000	4-5
Ventura County APCD	\$110,000	1
CEC Pool – all other air districts	\$529,000	5
<b>TOTAL</b>	<b>\$4,920,000</b>	<b>45 - 47</b>

#### **B. Funding Split between Alternative-Fuel and Diesel School Buses**

With the adoption of the Lower-Emission School Bus Program Guidelines in December 2000, the Board designated two-thirds of the new bus purchase funding for alternative-fuel school buses and one-third of the funding for intermediate level diesel school buses. The Board's intent was for this policy to be implemented on a regional basis; therefore, air districts with distinct funding allocations were required to award funds consistent with the designated funding split, to the extent possible. In administering the program for other regions in California, the CEC was also to award funds consistent with the Board's designated funding split.

For this year's funding allocation provided through Proposition 40, the ARB is maintaining the designated funding split as a statewide goal, but with less emphasis on region-specific implementation. Due to the small pot of funding available this year, it is impractical for many air districts to maintain this funding policy in their respective regions. The ARB's policy will provide school districts with the flexibility to purchase either intermediate level diesel or alternative-fuel school buses, but will not constrain new bus purchases to a particular fuel type

as a result of decreased funding allocations. Based on purchase practices for the past two years of the program, the ARB staff believes the mix of new buses purchased statewide with program funds will be relatively consistent with the Board's original direction.

### **C. School District Funding Contributions**

This Guideline addendum contains minor modifications to the requirements for school districts' financial contributions for new buses funded through the Lower-Emission School Bus Program. The modifications presented below base the funding amount for each new bus purchase on the model year of the bus being replaced, and reduce the school districts' financial contribution for the replacement of each pre-1977 model year bus. Specifically, the modified Guidelines require that:

- The state will pay a minimum of 85 percent of the total cost of a new school bus (including taxes and applicable State Department of General Service fees) that replaces an in-use pre-1977 model year school bus, with a priority on replacing diesel school buses. The school districts' financial contribution will be capped at \$10,000 per each new bus purchased. Other grant funds, such as air district funds (e.g., motor vehicle registration fee monies) can be used as a source of the required school district funds. To maximize state funds, Carl Moyer Program funds cannot be used as a source of the required school district funds.
- The state will pay a minimum of 75 percent of the total cost of a new school bus (including taxes and applicable State Department of General Services fees) that replaces an in-use 1977 through 1986 model year school bus, with a priority on replacing diesel school buses. The school districts' financial contributions will be capped at \$25,000 per each new bus purchased. Again, other grant funds, such as air district funds (e.g., motor vehicle registration fee monies) can be used as a source of the required school district funds. To maximize state funds, Carl Moyer Program funds cannot be used as a source of the required school district funds.

In revising the amount that some school districts will contribute to each new bus purchase, the ARB is acknowledging that the state's current budget situation may impact schools' abilities to participate in the Lower-Emission School Bus Program. Schools already lack sufficient funding from general funds for non-mandated services, such as school transportation; limited transportation funding may further dwindle as school districts' budgets are cutback and re-prioritized.

With the limited funding available through Proposition 40, the Lower-Emission School Bus Program now focuses funding in those school districts with the oldest buses (and thus most impacted by the cost of transportation services), yet retains the concept of program "buy-in" for school districts. The ARB believes that

some form of program “buy-in” is necessary to maximize program benefits. It provides for the purchase of more new buses statewide, which means health and safety benefits for more people, and it ensures that school districts and/or air districts have a vested interest in adhering to program requirements.

It is important to point out that while the modifications presented above retain the same percentages of state funding for each new bus purchased as in the existing Lower-Emission School Bus Program Guidelines, in practice, the state may be funding more than the minimum 75 percent or 85 percent of a new bus purchase. Under the existing Lower-Emission School Bus Program, the state also paid more than the minimum state funding percentages in some cases. For example, if the total purchase price of a new compressed natural gas (CNG) bus is \$132,000, including applicable taxes and fees, and the school district contributes \$25,000, the state is actually paying over 80 percent (\$107,000) of the new bus total purchase price. If the school district qualifies for a reduced financial contribution based on the modifications contained in this Guideline addendum, the state would pay for an even higher percentage of the new bus total purchase cost.

#### **D. Air District Funding Contributions**

Air districts that administered their own Lower-Emission School Bus Programs using 2000 - 2001 and 2001 - 2002 fiscal year funds were required to contribute match funding in the amount of ten percent of their state grant awards for new bus purchases. This match funding requirement was not a legislative requirement, but a requirement of the Guidelines.

For the 2002 - 2003 fiscal year funds allocated from Proposition 40, the ARB is eliminating the match funding requirement for the three air districts (BAAQMD, SCAQMD, and SMAQMD) that have requested to continue administration of their own programs. Assembly Bill 425 specifically excludes air districts participating in the Lower-Emission School Bus Program from match funding requirements specified in Health and Safety Code section 44287. While the modified Guidelines do not require match funding from air districts administering their own programs, they do not prohibit any air district from providing match funding to augment its state funding allocation for new bus purchases, if it so chooses.

Additionally, air districts may use their own funds to pay for school bus PM retrofit projects. Air district funds allocated for school bus PM retrofit projects can then be used to meet match funding requirements established by the Carl Moyer Program, as described in the revisions to the Carl Moyer Program approved by the Board on April 24, 2003. Although Proposition 40 funds allocated to the Lower-Emission School Bus Program are for use only for new school bus purchases and not for use for PM retrofit projects, the ARB continues to encourage the introduction of PM retrofit technology. Reducing exposure to diesel PM, particularly for school children, is a high priority for the Board.

## **E. Environmental Justice Requirements**

Proposition 40 requires that funds appropriated to the ARB be used in a manner consistent with the environmental justice provisions of Assembly Bill 1390 (Chapter 732, Statutes of 2001). These provisions (contained in Health and Safety Code section 43023.5) require air districts with populations of one million residents or more to distribute one-half of their respective funding allocations to directly benefit low-income communities and communities of color that are disproportionately impacted by air pollution. The 2001 - 2002 fiscal year funds for new bus purchases within the existing Lower-Emission School Bus Program were subject to environmental justice provisions of AB 1390; therefore, this is not a new requirement as a result of Proposition 40.

Based on Health and Safety Code section 43023.5, five air districts are subject to the environmental justice provisions. They are: the South Coast Air Quality Management District, the Bay Area Air Quality Management District, the San Joaquin Valley Air Pollution Control District, the San Diego County Air Pollution Control District, and the Sacramento Metropolitan Air Quality Management District. All other air districts are encouraged to allocate their respective funds in a similar manner, to the extent possible.

For disbursement of the Proposition 40 funds, air districts and the CEC will continue to implement the environmental justice requirements using the same ARB-recommended criteria developed for the expenditure of the 2001 - 2002 fiscal year funds. This criteria uses the percentage of students within a public school district participating in the state's free and reduced-lunch meal program to assist in identifying a region in which to target funds. Alternatively, air districts may develop and use different criteria, if approved by the ARB. The ARB staff will continue to work with air districts and the CEC, as needed, to assist in meeting the requirements of Health and Safety Code section 43023.5.

## **III. UPDATED CRITERIA FOR FUNDING NEW SCHOOL BUSES WITH LOW-EMITTING ENGINES**

The existing Lower-Emission School Bus Program Guidelines provide the eligibility criteria for funding new school buses with low-emitting engines. In general, the existing Guidelines require new school buses purchased with program funds to emit less toxic PM emissions and smog-forming NOx emissions than allowed by current emission standards. Due to the introduction of new emission requirements in October 2002, it is now necessary to update the eligibility criteria for funding new school bus purchases.

This section summarizes the existing Guideline requirements and provides the ARB's newly updated eligibility criteria for funding new school buses with lower-

emitting engines produced after October 1, 2002, and through the 2003 model year.

Based on the current status of alternative-fuel and diesel engine technology, the new eligibility criteria do not require engines in program-funded school buses to meet reduced-emission NOx levels. The ARB staff will be assessing the status of engine technology prior to the introduction of 2004 model year engines with the intent of reinstating the requirement that engines in program-funded school buses achieve reduced-emission NOx levels. The new eligibility criteria do require engines in program-funded school buses to meet reduced-emission PM levels and to be equipped with exhaust aftertreatment technology, regardless of engine fuel type. Diesel engines in school buses purchased with program funds must be equipped with catalyzed diesel particulate filters, as they were required during the first two years of the program. Based on the Board's direction at the March 27, 2003, public hearing, alternative-fuel engines in school buses purchased with program funds must now be equipped with oxidation catalysts. The ARB believes the updated eligibility criteria is responsive to school districts' transportation needs and achieves the program's goal to provide clean, safe school buses for California's school children.

#### **A. Existing Criteria for Funding New School Buses**

Under the existing Guidelines, the ARB funded school buses with alternative-fuel engines and intermediate level diesel engines. The Board approved this policy to provide school districts with the flexibility to choose the fuel type most advantageous to their fleet operations. New school buses eligible for funding under the existing program met either of the following requirements:

Option 1: The ARB funded the purchase of new school buses with heavy-duty alternative-fuel engines certified to one of the ARB's optional, reduced-emission NOx standards starting at 2.5 grams per brake horsepower-hour (g/bhp-hr) NOx and at a PM level of 0.03 g/bhp-hr or less. Two engine manufacturers, Cummins and John Deere, produced alternative-fuel engines for school buses funded through the existing program.

Option 2: The ARB funded the purchase of new school buses with heavy-duty diesel engines certified to intermediate emission levels through the state engine family emission limit (FEL) process. These diesel engines were required to certify to a 3.0 g/bhp-hr NOx FEL and to a 0.01 g/bhp-hr or lower PM FEL. Two engine manufacturers, International and Caterpillar, produced intermediate level diesel engines for school buses funded through the existing program. These engines were equipped with catalyzed diesel particulate filters and required the use of low-sulfur diesel fuel (diesel fuel with a sulfur content of no greater than 15 parts per million by weight).

## **B. Updated Criteria for Funding New School Buses**

For expenditure of the Proposition 40 funds allocated from the 2002 – 2003 fiscal year, the Lower-Emission School Bus Program will fund new school buses with 2003 model year heavy-duty engines that meet their legally-required NOx limits, that are equipped with exhaust aftertreatment technology and have PM certification emission levels below the current 0.10 g/bhp-hr PM emission standard (criteria for reduced-emission PM levels are discussed below), and that are delivered to school districts by the delivery deadline of September 1, 2004. The original Guideline requirements for the disposition of each old school bus replaced with a new bus purchased with program funds remain in force. In most cases, the existing Guidelines require that each replaced bus be permanently removed from service through crushing. An exception to this requirement is the existing provision that allows a 1977 through 1986 model year replaced bus to replace a CHP-certified, in-use pre-1977 model year school bus in another California bus fleet (not limited to public school bus fleets). In this situation, the pre-1977 model year bus must then be permanently removed from service through crushing.

### Updated Emission Standard Criteria

The updated emission standard criteria maintain the Board's original policy decision to provide the flexibility for alternative-fuel and intermediate level diesel purchases, while recognizing that not all engine manufacturers participating in the Lower-Emission School Bus Program are subject to the October 1, 2002, "pull-ahead" NOx plus non-methane hydrocarbons (NMHC) emission standard. The "pull-ahead" standard, a provision of the federal Consent Decrees/California-specific Settlement Agreements, requires the majority of on-road heavy-duty engine manufacturers to produce engines meeting a NOx plus NMHC standard of 2.4 g/bhp-hr, or 2.5 g/bhp-hr with a 0.5 g/bhp-hr cap on NMHC, starting on October 1, 2002 – over one year ahead of when originally required by the United States Environmental Protection Agency and the ARB.

Based on the updated emission standard criteria, the engine manufacturers currently participating in the Lower-Emission School Bus Program, and their expected product lines for the 2003 model year, new school buses with heavy-duty engines from the following engine manufacturers would be eligible for funding from 2002 – 2003 fiscal year funds:

**John Deere:** John Deere supplies the majority of CNG engines for school buses in California. It is not subject to the Consent Decrees/Settlement Agreements and therefore is not required to meet the NOx plus NMHC "pull-ahead" standard, which became effective on October 1, 2002. Legally, John Deere can produce engines certified to a 4.0 g/bhp-hr NOx emission standard through the 2003 model year. In practice, however, John Deere would continue to produce CNG



engines certified to at least 2.5 g/bhp-hr NOx for participation in the Lower-Emission School Bus Program. Based on the updated emission standard criteria, school buses powered by John Deere engines certified to a 2.5 g/bhp-hr NOx emission standard or lower, and also equipped with an oxidation catalyst and certified at a reduced PM emission level of 0.03 g/bhp-hr or lower would be eligible for funding. By July of 2003, John Deere expects to have available a heavy-duty CNG engine for use in school buses that is certified to one of the ARB's optional, reduced-emission NOx standards and that is equipped with an oxidation catalyst.

**Cummins:** Cummins also supplies CNG engines for school buses, although its engines are not in common use in school buses in California. Cummins engines, CNG and diesel, are subject to the October 2002 "pull-ahead" standard of 2.5 g/bhp-hr NOx plus NMHC. Based on the updated emission standard criteria, school buses powered by Cummins CNG engines certified to a 2.5 g/bhp-hr NOx plus NMHC standard or lower, and also equipped with an oxidation catalyst and certified at a reduced PM emission level of 0.03 g/bhp-hr or lower would be eligible for funding. Cummins has already certified a 2003 model year engine equipped with an oxidation catalyst for use in school buses to a 1.8 g/bhp-hr optional, reduced-emission NOx plus NMHC standard and to a 0.03 g/bhp-hr optional, reduced-emission PM standard.

**International (Navistar):** International is participating in the existing Lower-Emission School Bus Program with its intermediate level diesel engine equipped with a catalyzed diesel particulate filter that is certified to an FEL of 3.0 g/bhp-hr NOx and 0.01 g/bhp-hr PM. Under its provisions of the Consent Decrees/Settlement Agreements, International can legally produce 3.1 g/bhp-hr NOx engines through the 2003 model year. Based on the updated emission standard criteria, school buses powered by these International engines, which certify just under International's legally-required NOx limit and to a 0.01 g/bhp-hr PM FEL, would continue to be eligible for funding.

School buses powered by Caterpillar's intermediate level diesel engine would not be eligible for funding, based on the updated emission standard criteria. Unlike International, Caterpillar is subject to the "pull-ahead" provision of the Consent Decrees/Settlement Agreements and was required to meet the NOx plus NMHC "pull-ahead" standard starting on October 1, 2002. At the time the Board approved the modifications contained in this addendum, Caterpillar was unable to meet the emission requirements of the "pull-ahead" standard and is paying a per-engine non-conformance penalty (NCP) that will allow it to continue to sell its higher-emitting engines. As a matter of policy, the ARB believes that any engine that uses NCPs as its method of compliance with Consent Decree/Settlement Agreement requirements should be ineligible for grant funding.

While not specifically mentioned above, the updated emission standard criteria would also allow funding for new school buses with heavy-duty diesel engines

certified to the NO<sub>x</sub> plus NMHC “pull-ahead” standard (or lower) and to a reduced-emission PM level of 0.01 g/bhp-hr. To date, no engine manufacturer has certified a diesel engine for use in school buses to both the “pull-ahead” standard and to a reduced-emission PM level.

#### Timeline for the Lower-Emission School Bus Program (2002 – 2003 FY)

Table 4 below presents an overview of the timeline for the Lower-Emission School Bus Program for expenditure of the 2002 - 2003 fiscal year funds. Dates shown are the final dates for the execution of the designated activities. In addition to meeting the emission standard criteria discussed above, all school buses purchased with funding from the Lower-Emission School Bus Program must be delivered to school districts by the delivery deadline specified in Table 4. The delivery deadline must be included in the contract language in which the public agency (either the CEC or the local air districts that self-administer the program) awards program funds to school districts and in the purchase order agreement between school districts and school bus distributors. The failure to meet this delivery deadline will result in a performance penalty assessed against the business entity (e.g., engine manufacturer, school bus manufacturer, or school bus distributor) responsible for the delivery delay. The performance penalty is discussed further in Section IV of this addendum.

**TABLE 4**

<b>Lower-Emission School Bus Program Timeline for 2002 – 2003 FY Funds</b>	
March 27, 2003	ARB Board acts on Updated Guideline Proposal
May 15, 2003	ARB enters into funding agreements with air districts/CEC
June 30, 2003	School districts’ application deadline for new buses
August 15, 2003	Buses ordered from distributors
September 1, 2004	All new buses delivered
November 1, 2004	Final reports due to ARB from air districts and CEC

#### **C. Emission Benefits**

Because school buses remain in service for many years, some 20 years and longer, replacing old school buses with new, low-emitting models provides long-term public health benefits. Based on the funding allocation of \$4,920,000 for the 2002 – 2003 fiscal year, the ARB estimates that the Lower-Emission School Bus Program will reduce NO<sub>x</sub> emissions by approximately 6 tons and PM emissions by approximately 10 tons over the period from 2004 through 2019.

#### **IV. PERFORMANCE PENALTY FOR LATE DELIVERY OF SCHOOL BUSES**

The modified Guidelines now include a mechanism by which a monetary performance penalty is assessed against the business entity responsible for a delay that results in the failure to deliver program-funded school buses to school districts by the specified delivery deadline of September 1, 2004. Specifically, the ARB will assess a performance penalty of \$100.00 per day for each day a bus is delivered after the delivery deadline. The purpose of this performance penalty is to ensure a level playing field for all business entities that stand to profit from the purchase of program-funded school buses and to minimize any potential risks to school districts.

For the three air districts that will self-administer the program (BAAQMD, SCAQMD, and SMAQMD) the performance penalty will be administered through a withhold by the ARB of five percent of the total grant fund award to each air district until after the September 1, 2004, delivery deadline. Upon confirmation by each air district that all program-funded buses have been delivered to school districts by September 1, 2004, the ARB will immediately release the remaining five percent of their respective grant awards to each air district. For each bus delivered late, the air districts will be required to reduce the grant payment to either the school bus distributor or the school district (depending on the contract arrangements for the payment of bus purchase orders) by \$100.00 per day for each day a bus is delivered after September 1, 2004. The ARB will retain an amount equal to the calculated performance penalty from the applicable air district's grant withhold. Upon confirmation of final bus delivery to the school districts, the ARB will then release the remaining grant award balance, if any, to the air district.

For the regions in California for which the CEC administers the program, the performance penalty will be administered through a similar mechanism. For each bus delivered late, the CEC will be required to reduce the grant payment to either the school bus vendor or the school district (depending on the contract arrangements for the payment of bus purchase orders) by \$100.00 per day for each day a bus is delivered after September 1, 2004. For each bus delivered after this deadline, the ARB will reimburse the CEC, upon receipt of contractually-specified invoices, an amount equal to the state's share of the bus purchase price minus the calculated performance penalties.

As mentioned in Section III, the delivery deadline must be included in the contract language in which the public agency (either the CEC or the local air districts that self-administer the program) awards funds to school districts, and in the terms and conditions of the purchase order agreement between school districts and school bus distributors. In addition, each funding award contract and school bus purchase order agreement must contain the following statement:

“The ARB shall assess a performance penalty of \$100.00 per day per bus on the business entity responsible for a delay that results in the failure to deliver to school districts any school bus purchased with funds from the Lower-Emission School Bus Program by the delivery deadline contained in this agreement. For each bus delivered to a school district after September 1, 2004, the local air district or the California Energy Commission, whichever public agency is responsible for administering the program, shall reduce the grant award payable to the school bus distributor or school district by an amount equal to the calculated performance penalties.”

Any funds generated through the enforcement of this performance penalty will be used to augment program funding in the region in which the violation occurred for those air districts with distinct funding allocations. For violations that occur in school districts within air districts without distinct funding allocations, the funds collected through the enforcement of this penalty will be used to augment program funding on a statewide basis.

## **V. APPLICATION AND AWARD PROCESS**

There are no changes to the school district application and award process currently used in the Lower-Emission School Bus Program. School districts located within the Bay Area Air Quality Management District, the South Coast Air Quality Management District, and the Sacramento Metropolitan Air Quality Management District shall submit applications directly to the applicable air district. School districts in all other air districts shall submit applications directly to the California Energy Commission. More information regarding the application process, including a sample application format, is contained in the Lower-Emission School Bus Guideline document approved by the Board on December 7, 2000. This document can be downloaded from the ARB’s web site at: <http://www.arb.ca.gov/msprog/schoolbus/schoolbus.htm>.

## **VI. REPORTING AND AUDITING REQUIREMENTS**

The existing Lower-Emission School Bus Program is implemented in a manner to streamline reporting requirements for school districts and air districts. It is the ARB’s intent to continue with this streamlined reporting process contained in the Lower-Emission School Bus Guideline document approved by the Board on December 7, 2000, will continue.

Because the funding for the continuation of the Lower-Emission School Bus Program now comes from a voter-approved initiative, expenditures from this source (i.e., Proposition 40) must be reported to the Legislature on an annual basis. As a result, the Office of State Audits and Evaluations within the Department of Finance will audit program administration at both the state and local levels, and report to the Legislature on its findings. Information provided by

the ARB to the Office of State Audits and Evaluations will be based on information provided by those air districts that their own programs, and on information provided by the CEC, which will administer the program for participating school districts in the remaining areas of the state. Based on the program timeline presented in this document, final reports from the air districts and the CEC for the expenditure of 2002 - 2003 fiscal year funds will be due to the ARB by November 1, 2004.